

## Commentary: A health policy change would benefit a protocol-based screening for diabetic retinopathy in India

The global epidemic with a spiraling rise in the number of people with diabetes mellitus is a harbinger to two other catastrophes; the reduced quality of life at the individual level and rise in the cost of care for the affected person, the family, and the country. The estimated quality-adjusted life years (QALY) loss due to visual impairment is high; in one study QALY was 74.93 years per 100,000 person-years.<sup>[1]</sup> In 2030, the global cost of combined direct and indirect care for people with diabetes is estimated to be US\$ 2.1 to US\$ 2.5 trillion (2015 cost: US\$ 1.3 trillion).<sup>[2]</sup> In India, reports indicate that a low-income family could be spending up to 20% of family income on one adult with diabetes, and up to 35% of family income on one child with diabetes. (Health News, Times of India; November 19, 2015. www.timesofindia.indiatimes.com; accessed July 15, 2020). The key to reduce visual impairment and blindness for any chronic disease including diabetes is early detection and treatment. It is an effective tool for diabetic retinopathy too, the commonest blinding microvascular complication of diabetes mellitus and it meets nearly all World Health Organization (WHO) approved criteria for screening in chronic diseases.<sup>[3]</sup>

The current issue of the journal has published guidelines based on India specific diabetic retinopathy screening.<sup>[4]</sup> It is formulated by experts from two professional bodies of ophthalmologists and vitreoretinal specialists. This is a very welcome step since it is likely to guide over 23,000 ophthalmologists (including over 1000 vitreoretinal specialists) in the country. The guideline has addressed several issues from an Indian perspective and supplements the earlier published guidelines developed by a consortium of experts commissioned by the Indian Institute of Public Health (Public Health Foundation of India).<sup>[5]</sup> Some of the practices lie in the domain of professionals as to *who* should perform screening, *how* should screening be conducted, and *when* should one be referred for further care. By establishing the NPCB VI National Program for Control of Blindness Visual Impairment ([NPCB VI], 1976; www.npcbvi.gov.in; accessed July 16, 2020) and the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular disease, and Stroke ([NPCDCS], 2010; www.nhm.gov.in; accessed July 12, 2020) India has acknowledged the need and has indicated its commitment to eye care and care of chronic diseases.

In addition to these welcome developments, a concurrent policy change of diabetic retinopathy screening and management would accelerate the country's effort to reducing the growing health and eye health burden secondary to diabetes and diabetic retinopathy. The guidelines will also help other countries in the South Asia region with similar demographics and trajectory of diabetes.

*Capacity building and Task Sharing.* It is now agreed that non-ophthalmologists are equally competent in retinal image capture and grading these fundus images for diabetic retinopathy screening. As a result of chronic under-investment in education and training of health workers the WHO estimates a projected shortfall of 18 million health workers by 2030

globally; it would be mostly in low- and middle-income countries including India.<sup>[6]</sup> We need a policy for short-term technical courses for capacity building for eye care at the primary level. Adapting to Joint Commission on Allied Health Personnel in Ophthalmology ([JCAHPO]; www.jcahpo.org; accessed July 16, 2020) we recommend certified technical courses in ophthalmic practice as a good starting point using the international norms and standards.

*National Diabetes Registry and Digital Health System.* One of the prime motivating factors behind a screening program for diabetic retinopathy is the evidence-based standardized care. The key performance indicator of successful diabetic retinopathy screening lies in the proportion of people with diagnosed sight-threatening diabetic retinopathy (STDR) reporting for treatment. Creating a nation-level database with a digital health record system can ease this task. In 2015, India formed the National eHealth Authority ([NeHA]; www.nhp.gov.in; accessed July 15, 2020). A uniform electronic health record used by every healthcare provider in the country, both public and private, would be the most ideal to document and monitor the morbidity, patient behavior, and treatment outcome longitudinally.

*Public-private partnership.* A substantial amount of eye care is provided by ophthalmologists in private practice in India. The public health system in India is equally robust with five-tier delivery points of subcenter, primary health center (PHC), community health center (CHC), district hospital, and medical colleges. Currently, India has 160,713 subcenters, 30,045 PHCs, 5685 CHCs, 734 district hospitals, and 542 medical colleges (www.mohfw.gov.in and www.niti.gov.in; accessed July 16, 2020). Added to these are the NCD (Non communicable Disease) cells and clinics (www.mohfw.gov.in accessed July 19, 2020). The Ministry of Health and Family Welfare, Government of India has stated a shortage of 3.9% health workers and 7.6% qualified medical practitioners as of March 31, 2019 (www.mohfw.gov.in accessed 16 July 2020). The majority of these facilities and health workforce are not engaged in ophthalmic care and hence a policy to build a strong public-private partnership would immensely improve eye care including screening for diabetic retinopathy.

*Health financing and Universal Health Coverage.* Over the years the eye health financing has increased in India. The 12<sup>th</sup> plan (2012–2017) allocated a budget of INR 25.06 billion and 60.00 billion for NPCB VI and NPCDCS, respectively. The health expenditure in India by the percentage of its gross domestic product (GDP) is low and out of pocket spending (OOPS) in India is high (www.data.worldbank.org; accessed July 16, 2020). The WHO strongly advocates equitable access, quality care, and no catastrophic financial hardship through the universal health coverage (UHC), (www.who.int; accessed April 8, 2020) and has recently recommended integrated people-centered eye care (IPCEC). India has already developed the basic structure of the IPCEC model. Using this five-layered structure, diabetes and diabetic retinopathy care including screening could be conveniently distributed from community to tertiary level care.<sup>[7,8]</sup>

Screening is not without limitations. Three important limitations are (a) screening does not guarantee protection from disease, (b) false-positive results end in physical/mental distress and cause additional treatment burden, and (c) false-negative results offer misplaced assurance. Equally important is that

screening is effective only when it is combined with proper referral and timely treatment. It is, therefore, imperative that screening programs should not be established without creating a proper referral pathway, appropriate treatment, and follow-up care.

### Financial support and sponsorship

Hyderabad Eye Research Foundation, Hyderabad, India (TD).

### Conflicts of interest

There are no conflicts of interest.

### Taraprasad Das<sup>1</sup>, Gudlavalleti V S Murthy<sup>2,3</sup>

<sup>1</sup>Srimati Kanuri Santhamma Centre for Vitreoretinal Disease, Kallam Anji Reddy Campus, L V Prasad Eye Institute, <sup>2</sup>Indian Institute of Public Health, Public Health Foundation of India, Hyderabad, Telangana, India, <sup>3</sup>Department of Clinical Research, London School of Hygiene & Tropical Medicine, London, UK


**Correspondence to:** Dr. Taraprasad Das,  
L V Prasad Eye Institute, Road # 2, Banjara Hills,  
Hyderabad - 500 034, Telangana, India.  
E-mail: tpd@lvpei.org

## References

1. Park SJ, Ahn S, Park KH. Burden of visual impairment nad chronic diseases. *JAMA Ophthalmol* 2016;134:778-84.
2. Bommer C, Sagalova V, Heeseemann E, Manne-Goehler J, Atun A, Barnighausen T, *et al*. Global economic burden of diabetes in adults: Projections from 2015 to 2030. *Diabetes Care* 2018;41:963-70.
3. Das T, Raman R, Ramasamy K, Rani PK. Telemedicine in diabetic retinopathy: Current status and future directions. *Middle East Afr J Ophthalmol* 2015;22:174-8.
4. Raman R, Ramasamy K, Rajalakshmi R, Sivaprasad S, Natarajan S. Diabetic retinopathy screening guidelines in India: All India Ophthalmological Society diabetic retinopathy task force and Vitreoretinal Society of India Consensus Statement. *Indian J Ophthalmol* 2021;69:678-88.
5. Indian Institute of Public Health. Guidelines for the prevention and management of diabetic retinopathy and diabetic eye disease in India. 2019. Available from: [www.phfi.org](http://www.phfi.org) [Last accessed 2020 Jul 12].
6. Global Strategy on Human Resources for Health: Workforce 2030 Available from: [www.who.int/hrh/resources/globstrathrh-2030/en](http://www.who.int/hrh/resources/globstrathrh-2030/en). [Last accessed on 2020 Jun 26].
7. Das T, Keeffe J, Sivaprasad S, Rao GN. Capacity building for universal eye health coverage in South East Asia beyond 2020. *Eye* 2020;34:1262-70.
8. Murthy GVS, Sundar G, Gilbert C, Shukla R, on behalf of the IIPH DR Project Implementation Core Team. Operational guidelines for diabetic retinopathy in India: Summary. *India J Ophthalmol* 2020;68:559-62.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

### Access this article online

Quick Response Code:	Website:
	<a href="http://www.ijo.in">www.ijo.in</a>
	DOI: 10.4103/ijo.IJO_2363_20

**Cite this article as:** Das T, Murthy GV. Commentary: A health policy change would benefit a protocol-based screening for diabetic retinopathy in India. *Indian J Ophthalmol* 2021;69:689-90.